

# The Effectiveness of the Problem-based Learning-Internet Information Literacy (PBL-IIL) Model in Minimizing Plagiarism among Students

1<sup>st</sup> Arwendria  
Universitas Negeri Padang  
Indonesia  
[arwendriadahlan@gmail.com](mailto:arwendriadahlan@gmail.com)

3<sup>rd</sup> Ahmad Fauzan  
Universitas Negeri Padang  
Indonesia  
[ahmad.zan66@gmail.com](mailto:ahmad.zan66@gmail.com)

2<sup>nd</sup> Z. Mawardi Effendi  
Universitas Negeri Padang  
Indonesia  
[zmeffendi@fe.unp.ac.id](mailto:zmeffendi@fe.unp.ac.id)

4<sup>th</sup> Darmansyah  
Universitas Negeri Padang  
Indonesia  
[darmansyah@gmail.com](mailto:darmansyah@gmail.com)

**Abstract** – The purpose of the research was to identify the effectiveness of PBL-IIL model in minimizing plagiarism among students. This quantitative study was commenced with third year students (n=36) who took digital library management courses who learn using the PBL-IIL model. In this study used a plagiarism checklist. To measure the level of plagiarism, the Plagiarism Checker software was used. The result of study showed that PBL-IIL model was effective in minimizing the desire to commit plagiarism among students. From time to time there was a decrease in the desire of students to do plagiarism.

**Keywords**—PBL-IIL, model, Plagiarism,

## I. INTRODUCTION

Research studies indicate that plagiarism is a significant problem in higher education institutions in the digital era and increase in recent years. Based on the results of a survey conducted by the Pew Research Center [1] in 2011 on College Presidents students found that plagiarism in student papers have increased in the last ten years. Moreover, Kim et.al [2] investigated the occurrence of plagiarism by medical students of Dongguk University Medical School, South Korea in a problem-based learning (PBL) course. The study showed that thirty-three students (62%) plagiarized, mainly copying and pasting information from websites using Google, a Korean search engine, or the one offered by a Korean medical center.

The reason why students do plagiarism were explored in Wood [3]. He concluded that Suny Cortland University students confused about paraphrasing, confused to produce their own work, and did not analyze information critically, particularly Web-based sources. They argued that millennial did not have knowledge to assess and evaluate information from media or Internet.

To minimize the tendency of internet plagiarism, the problem-based learning - internet information literacy (PBL-IIL) model was developed. The model has been

implemented for 1 semester in Islamic Culture History Department students, Imam Bonjol State Islamic University, Padang, Indonesia.

The best way to address the problem of plagiarism is revised institutional plagiarism policies combined with authentic pedagogy [4]. The PBL-IIL model intervention was intended to help students avoid plagiarism. According to Smedley, Crawford, Cloete [5] that educational interventions can increase students' knowledge and understanding of plagiarism. Thus, was the implementation of the PBL-IIL model can reduce plagiarism among students effectively?

There has been no agreement on the definition of universal plagiarism. According to Sutherland-Smith [6] that the meaning of plagiarism in society depends on various interpretive contexts. Each institution develops its own definition and there are even various interpretations of plagiarism itself. Aberdeen College [7] defines plagiarism as a practice that intentionally takes and uses the work of others and claims, directly or indirectly, as their own work. Plagiarism means presenting a work or someone else's property as his own, without appropriate recognition or reference [8].

Many practitioners agreed that plagiarism was growing, and the internet is considered as a means to facilitate plagiarism [9][10]. McCabe [11] studied Internet plagiarism comprehensively in 2003 at 23 universities in the United States. He concluded that internet plagiarism among students increased. About 30% have copied from the internet [12]. These findings represent an increase of 10% in similar studies conducted two years earlier.

The survey results in Canada in 2006 also proved that more than half of students and 35% of postgraduate students surveyed admitted doing academic fraud, such as not including the source of information cited, using the work of others, and falsifying bibliographies [13]. Also in the same year, the Josephson Institute of Ethics reported that 33% of high school students surveyed admitted copying internet documents for class assignments in the past 12 months, even about 18% did it twice or more [10].

Most students understood that copying a work directly was wrong. However, students often did not know how to avoid plagiarism [14]. There were many factors, such as poor time management [15]; [16]; [17],

did not understand the tasks given properly [15]; [16], obtaining high grades [15]; [16]; [18]; [17], ease of accessing information sources from the Internet [15]; [16], social pressure, negative attitudes against teachers or lecturers, lack of prevention [15] as a cause of plagiarism.

Learner-centered pedagogical approaches helped learners to develop critical thinking abilities, to contribute to fruitful collaborations, to give appropriate credit for others' contributions and to strive for originality [19]. Chaffee [20] states that critical thinking was essential for college students to succeed, but few students are taught these skills in high school. In order to bridge the gap, problem solving and critical thinking should be taught as a part of each college course. However, Students that have traditionally learnt by rote and imitation, and never been taught critical thinking and analysis skills, were likely to plagiarize unintentionally [21].

The teacher plays a role in facilitating students' learning by utilizing rich contextual problems, probing questions to guide students' development of thinking and to lead classroom discussion [22]. The teachers did not do more than teaching content, they had to foster development of critical thinking skills. They understood that was not enough for learners to acquire information; learners also needed to know how to use, apply and evaluate information, and how to create new knowledge [19]. They also realized that students need to learn ethics-based critical thinking skills if they were to be successful, as adults, in the workforce [23].

## II. METHOD

The primary aim of this study was to identify the effectiveness of PBL-ILL model in minimizing plagiarism among student. This quantitative study was commenced with third year students (n=36) who took digital library management courses who learn using the PBL-ILL model.

Data is taken for 11 meetings or for 1 semester. Plagiarism assessment guidelines consisted of format, quote, style, and content. In this study used a plagiarism checklist. From the checklist, it was then grouped into plagiarism rubrics which were categorized into numbers, namely 4 = Without plagiarism, 3 = Sham (Sources mentioned, but how to quote wrong), 2 = Verbatim (copying source word for word without citing the source, so presentation material was considered as one's own), and 1 = Purloining (copying the work of others, both with permission and without the person's knowledge). To measure the level of plagiarism, the Plagiarism Checker software was used.

## III. RESULT

The results of the study showed that from modules 1-3, students did not make efforts to commit plagiarism, but in module 4 there was an increase in plagiarism. The tendency to reduce plagiarism can be seen in Module 5. One of the efforts made to overcome the tendency of

plagiarism was to provide an understanding of the dangers of plagiarism in each reflection.

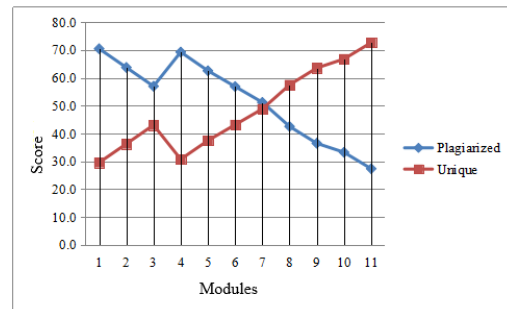


Fig.1 Plagiarism Checker Detection based on Module

In general, students were still doing plagiarism. From figure 2 showed that the highest type of plagiarism was Sham (the source was mentioned, but the method of quoting was wrong). The second type of highest plagiarism was Verbatim (copying the source word for word without citing the source, so the presentation of the material was regarded as one's own). The third type was Purloining (copying the work of others, both with



Fig.2 Distribution of Plagiarism Types

permission and without the knowledge of the person).

In table 1 it can be seen that the type of students' plagiarism tended to decrease from modules 1 - 11. From modules 1-4, all students indicated plagiarism. However, the trend was decreasing from modules 5-11. Not only the students' tendency to plagiarize decrease, and also the type of plagiarism.

TABLE 1. MODULE BASED PLAGIARISM

Module	Plagiarism Type			
	No	Sham	Verbatim	Purloining
1	0.0	11.1	69.4	19.4
2	0.0	22.2	69.4	8.3
3	0.0	38.9	61.1	0.0
4	0.0	13.9	77.8	8.3
5	2.8	25.0	66.7	5.6
6	2.8	27.8	69.4	0.0
7	2.8	69.4	27.8	0.0
8	2.8	91.7	5.6	0.0
9	16.7	77.8	5.6	0.0
10	16.7	83.3	0.0	0.0
11	30.6	69.4	0.0	0.0
<b>Average</b>	<b>6.8</b>	<b>48.2</b>	<b>41.2</b>	<b>3.8</b>

The results of research on plagiarism can also be seen by group. The group that did the most plagiarism was group I, followed by groups, II, III, IV, and V. However, from the type of plagiarism, group II found more

Purloining plagiarism and verbatim. Table 2 below shows the distribution of plagiarism by group.

TABLE 2. PLAGIARISM BY GROUP

Module	Plagiarism Checker Detection									
	I		II		III		IV		V	
	P	U	P	U	P	U	P	U	P	U
1	74.3	25.8	81.0	19.0	64.4	35.6	69.4	30.6	62.6	37.4
2	65.9	34.1	67.6	32.4	64.7	35.3	60.9	39.1	59.3	40.7
3	63.6	36.4	60.3	39.7	55.9	44.1	51.9	48.1	52.3	47.7
4	73.0	27.0	79.7	20.3	63.3	36.7	68.3	31.7	61.4	38.6
5	64.6	35.4	66.3	33.7	63.6	36.4	59.7	40.3	58.1	41.9
6	58.8	41.3	58.0	42.0	58.9	41.1	54.7	45.3	53.7	46.3
7	52.9	47.1	49.7	50.3	54.1	45.9	49.7	50.3	49.3	50.7
8	44.0	56.0	38.1	61.9	44.6	55.4	44.1	55.9	41.6	58.4
9	37.1	62.9	32.3	67.7	38.3	61.7	38.6	61.4	36.0	64.0
10	34.0	66.0	29.3	70.7	34.7	65.3	35.4	64.6	32.7	67.3
11	30.4	69.6	25.0	75.0	26.1	73.9	29.7	70.3	25.1	74.9
Average	54.4	45.6	53.4	46.6	51.7	48.3	51.1	48.9	48.4	51.6

The results of the study show that the PBL-IIL model was effective in minimizing the desire for plagiarism among students (intentional plagiarism). Every meeting, students were given the knowledge and skills to find, assess, evaluate information sources, and use the information ethically. These knowledge and skills must be used by students, both in the classroom and outside the classroom.

In the PBL-ILL model, students were also given reflective writing skills. Reflective writing can be summarized as looking back at something, thinking about it and learning from it. Reflective writing, or writing about one's personal experiences of learning, was appearing more and more often as a requirement of Higher Education courses, and in the professional regulatory procedures for many scientific and technical careers.

The main weaknesses of students, apart from writing skills, especially paraphrasing, were knowledge of citation. However, when continuously given knowledge about citation, there was a gradual decline in plagiarism. In PBL-ILL model, these skills were given each time a meeting, including how to apply them in writing.

#### IV. CONCLUSION

PBL-IIL model was effective in minimizing the desire to commit plagiarism among students. From time to time there was a decrease in the desire of students to do plagiarism. The implementation of reflective writing also increased the effectiveness of PBL-ILL model to minimize this problem. Nevertheless, the plagiarism behavior cannot be eliminated immediately. For that, a comprehensive policy was needed from universities, and an understanding of all stakeholders that the behavior of plagiarism was very dangerous for these students and science.

#### REFERENCES

[1] Kim Parker, Amanda Lenhart, and Kathleen Moore, "The Digital Revolution and Higher Education: College Presidents, Public

Differ on Value of Online Learning," Pew Research Center, Washington, D.C., Research 2011.

[2] Kyong-Jee Kim, Jee Young Hwang, Dong-Wook Lee, and Ming-Sung Shim, "Medical student plagiarism in problem-based learning courses," *Medical Education Online*, vol. 21, January 2016.

[3] Gail Wood, "Academic Original Sin: Plagiarism, the Internet, and Librarians," *The Journal of Academic Librarianship*, vol. 30, no. 3, pp. 237-242, May 2004.

[4] Rebecca Moore Howard, "Understanding "Internet plagiarism"," *Computers and Composition*, vol. 24, pp. 3-15, 2007.

[5] Alison Smedley, Tonia Crawford, and Linda Cloete, "An intervention aimed at reducing plagiarism in undergraduate nursing students," *Nurse Education in Practice*, 2015.

[6] W. Sutherland-Smith, *Plagiarism, the internet and student learning: Improving academic integrity*. New York: Routledge, 2008.

[7] University of Aberdeen. (2017) UoA: Academic Quality Handbook: Resolution No [ 280]. [Online]. <https://www.abdn.ac.uk/sls/online-resources/avoiding-plagiarism/>

[8] Curtin University. (2010) What is Plagiarism? [Online]. [https://academicintegrity.curtin.edu.au/overview/Plagiarism\\_what\\_is.cfm](https://academicintegrity.curtin.edu.au/overview/Plagiarism_what_is.cfm)

[9] L. Renard, "Cut and paste 101: Plagiarism and the Net," *Educational Leadership*, vol. 57, no. 4, pp. 38-42, 1999/2000

[10] T. S. Robert, Ed., *Student plagiarism in an online world: problems and solutions*. Hershey: IGI Global, 2008.

[11] D. McCabe, "Academic dishonesty survey study," Rutgers University, New Jersey, Unpublished Study 2003.

[12] S. Rimer. (2003, September) The New York Times. [Online]. [http://www.swarthmore.edu/NatSci/cpurin1/plagiarism/docs/Plagiarism\\_on\\_campus\\_NYT\\_.pdf](http://www.swarthmore.edu/NatSci/cpurin1/plagiarism/docs/Plagiarism_on_campus_NYT_.pdf)

[13] K. Birchard, "Cheating is rampant at Canadian colleges," *The Chronicle of Higher Education*, vol. 53, no. 8, 2006.

[14] James Elmborg, "Critical Information Literacy: Implications for Instructional Practice," *The Journal of Academic Librarianship*, vol. 32, no. 2, pp. 192-199, March 2006.

[15] J. Chaffee, "Critical thinking skills: The cornerstone of developmental education," *The Journal of Development Education*, vol. 15, no. 3, pp. 28-39, 1992.

[16] Madhumita Bhattacharya and Lone Jorgensen, "Minimizing Plagiarism by Redesigning the Learning Environment and Assessment," in *Students Plagiarism in an Online World: Problems and Solutions*. Hershey: Information Science Reference, 2008, ch. Chapter XIII.

[17] B. Leask, "Plagiarism, cultural diversity and metaphor-implications for academic staff development.," *Assessment & Evaluation in Higher Education*, vol. 31, no. 2, pp. 183-199, 2006.

[18] Wany Widjaja, Maarten Dolk, and Ahmad Fauzan, "The Role of Contexts and Teacher's Questioning to Enhance Students' Thinking," *Journal of Science and Mathematics*, vol. 33, no. 2, pp. 168-186, 2010

[19] Ann Lathrop and Kathleen E. Foss, *Student Cheating and Plagiarism in the Internet Era : A Wake-up Call*. Englewood: Libraries Unlimited, 2000.

[20] A. Dordoy, "Cheating and plagiarism: staff and student perceptions at Northumbria," in *Educating for the Future*, Newcastle, 2002.

[21] C. Park, "In Other (People's) words: Plagiarism by University students - literature and lessons," *Assessment and Evaluation in Higher Education*, vol. 28, no. 5, pp. 471-488, 2003.

[22] G. J. Curtis and R. Popal, "An examination of factors related to plagiarism and a five-year follow-up of plagiarism at an Australian university," *International Journal for Education Integrity*, vol. 7, no. 1, pp. 30-42, 2011.

[23] Jan Bamford and Katerina Sergiou, "International Students and Plagiarism: An Analysis of the Reasons for Plagiarism among International Foundation Students," *Investigations in University Teaching and Learning*, vol. 2, no. 2, Spring 2005.